

April 10, 2017

**Protest of Lease Sale Auction and Leasing Parcels**

Sent by fax to: (303) 239-3799 BLM's Colorado State Office at 2850 Youngfield Street in Lakewood

**Parcels:**

7817,7818,7819,7820,7821,7822,7823,7824,7825,7826,7827,7852,7857,7836,7838,7839,7840,7816,  
7814, 7835, 7836, 7838, 7839, 7840

**Comment One:** Please consider the following comments in regards to the parcels listed above:

1. The evaluation of such a large acreage in an area which has a low potential for development constitutes a waste of tax payer dollars.
2. The Grand County economy is highly dependent on the quality of its environment, water quality, air quality, dark skies, quiet landscapes, wild landscapes, and scenic beauty. This lease sale jeopardizes that quality and puts a working economy at risk, replacing it with a boom bust economy. This does not benefit the federal mineral estate owner. The loss of business by existing businesses with longstanding clientele and superb reputations will be a net negative to the Federal Government.

For these two reasons I respectfully protest the lease sale of these parcels and request that you withdraw the parcels listed in the subject line from the May 2017 Lease Sale.

**Comment Two:** In the event that the parcels are not withdrawn I have the following comments:

1. All of the parcels listed above with the exception of 7820, 7827 and 7814 are over one thousand acres. The development and drilling of these parcels has the potential to create significant social, cultural, economic and environmental impacts. An environmental assessment is not adequate for these parcels. An Environmental Impact Statement should be prepared for each parcel.
2. Grand County is the headwaters of the Colorado River which provides water to approximately 13 million people. In addition Grand County has a number of springs; hot and cold, perennial and ephemeral. The hydrology of the springs is complicated and the relationship with surface waters is not fully understood. In the case of the hot springs in Hot Sulphur the hydrology is subject to debate between geological experts and not a settled question. The issue of connectivity with geological formations that are subject to drilling and high pressure fracking and whether these activities will affect water quality or quantity in springs must be determined. The lease stipulations for these parcels did not mention whether they contained springs. Springs should be identified on the parcels and fissures mapped.
3. Water wells should be mapped and stipulations regarding water well integrity and monitoring should be included.
4. The stipulations for parcels in Grand County lacked specificity in regards to set backs from raptor nests, surface closures for winter range and calving season and species identification, cut throat trout for example.
5. The impacts of heavy truck traffic serving these parcels via US 40 and US 9 should be accounted for and stipulations developed so that the traffic does not negatively impact the economy.

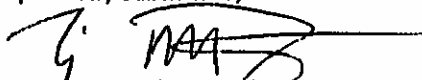
6. Grand County is subject to inversions. Emissions from drilling and production are not stationary and have the potential to negatively impact "hollows" when inversions occur even if the source is not immediately adjacent. All parcels in Grand County should be subject to air quality monitoring and analysis.

**Comment Three:**

Parcels 7822, 7823, 7824, 7825, 7826, 7821, 7857, 7840

1. These parcels surround or are adjacent to important businesses which contribute significantly to the Grand County economy. Visitors from all over the world enjoy unparalleled scenic and environmental quality, access non motorized places, enjoy hunting, horseback riding, fishing, soaking, boating, dark skies and peace and quiet. These parcels should be removed from the lease sale. If they are not, stipulations which prohibit impacts to dark skies and soundscapes, limit hours of operation, limit surface disturbance and minimize or prohibit road building are appropriate. Traffic impacts should be minimized.

Respectfully submitted,



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PO Box 2150  
Granby, CO 80446

**Protest of Lease Sale Auction and Leasing Parcels**

April 10, 2017

To the BLM's Colorado State Office at 2850 Youngfield Street in Lakewood, (303) 239-3799

Please consider this protest regarding the US Department of Interior Bureau of Land Management Environmental Assessment for the May 11, 2017 Competitive Oil & Gas Lease Sale ( Environmental Assessment). My comments regarding water, air and socioeconomic conditions are specific to the parcels 7814, 7816, 7817, 7818, 7819, 7820, 7821, 7822, 7823, 7824, 7825, 7826, 7827, 7835, 7836, 7838, 7839, 7840, 7852 and 7857 located in Grand County. My comments regarding Climate are for the above parcels previously listed and all other parcels mentioned in the Environmental Assessment.

I protest this sale for the following reasons.

The Environmental Assessment inadequately assesses the harm that will result from this Competitive Lease Sale and subsequent development to the following public resources:

- Water
- Air
- Climate
- Socioeconomic conditions

The Environmental Assessment goes to great pains to explain that the leasing itself will not cause impacts, only the subsequent actions will cause impacts. Two points on this. First the socioeconomic portion of the Environmental Assessment did not examine whether a lease sale will impact investment in recreational based businesses, businesses in general or housing construction. Tourism and construction are the two largest economic drivers in Grand County. There is no assessment provided as to whether the lease sale itself will discourage people's willingness to invest in Grand County thereby affecting the socioeconomic conditions within the County. Second the impacts resulting from oil and gas development of these parcels will only occur if these parcels are part of a competitive oil and gas sale. The lease sale and impacts cannot be separated.

**WATER:**

The Environmental Assessment does not adequately assess the risks to underground sources of drinking water. The PEA notes:

*Hydraulic fracturing would change the physical properties of the oil and gas producing formations by increasing the flow of water, gas, and/or oil around the well bore in the producing formation. There also could be the potential for migration of oil, gas, and water from one formation to another. The WRFO RMPA, Appendix 6, Hazardous Materials Management Plan, page 6-6, addresses the use of fracturing fluids in oil and gas operations and the means by which they are regulated. Also see section 3.4.3.2 Hazardous or Solid Wastes. (Page 55 PEA)*

*In addition, Rule 341 requires operators to monitor the well's bradenhead pressure during hydraulic fracturing and to report promptly to the COGCC any significant pressure increase. Monitoring these pressures helps to indicate if hydraulic fracturing fluids have escaped the target formation.(Page 55 PEA)*

It is known that hydraulic fracturing fluids contain carcinogens and neurotoxins. Rule 341 does not prevent the contamination of underground drinking water sources with hydraulic fracturing fluid it only provides a warning that underground drinking water sources may have been harmed. And while the oil and gas industry has been permitted to use chemicals in hydraulic fracturing fluid which are proven harmful to human health it is unclear whether it is legal for the industry to actually contaminate underground drinking water sources or to poison humans with these chemicals.

The Environmental Assessment references a Draft EPA study released June 2016 on hydraulic fracturing and notes that *"The EPA did not find evidence that these mechanisms have led to widespread, systemic impacts on drinking water resources in the United States (EPA)."* However a subsequent Freedom of Information Act Request has revealed that the language *"widespread, systemic impacts"* was added to the press release just one day before publication<sup>1</sup>. The study did not define what was meant by *"widespread or systemic"* and its scope was limited. Missing from the study are in depth analysis of impacts at Dimock, PA, Pavillion WY, Sublette, WY and Parker County, TX. In fact it is an open question whether EPA officials minimized the actual risk to drinking water for political purposes and how much scientists working on the study were limited by states, members of Congress and industry in their ability to conduct a thorough analysis of ground water in areas where hydraulic fracturing has impacted water resources. It should be noted that the EPA now operates on a budget that is 17% less than its budget in 1998<sup>2</sup>.

*Middle Park Basin is located in Grand County and encompasses about 1,030 square miles of complex valleys and subbasins that are traversed by belts of overthrust faulting<sup>3</sup>.*

<sup>1</sup> *Top officials of the U.S. Environmental Protection Agency last year made critical changes at the eleventh hour to a highly anticipated, five-year scientific study of hydraulic fracturing's effect on the nation's drinking water. The changes, later criticized by scientists for lacking evidence, played down the risk of pollution that can result from the well-drilling technique known as fracking. November 30, 2016 Co-reported by Tom Scheck of APM Reports and Scott Tong of Market Place <http://www.apmreports.org/story/2016/11/30/epa-changes-fracking-study>*

<sup>2</sup> *November 30, 2016 Co-reported by Tom Scheck of APM Reports and Scott Tong of Market Place <http://www.apmreports.org/story/2016/11/30/epa-changes-fracking-study>*

<sup>3</sup> *Ralf Topper, Karen L. Spray, William H. Bellis, Judith L. Hamilton, and Peter E. Barkmann. 2003. Ground Water Atlas of Colorado Special Publication 53 Colorado Geologic Survey <http://coloradogeologicalsurvey.org/water/groundwater-atlas/>*

Over thrust faulting has the potential to allow the migration of hydraulic fracturing fluid and methane between layers and into underground drinking water sources. However the understanding of the location and extent of underground drinking water sources in Grand County is incomplete:

*Publicly available water quality data for the bedrock aquifers in Middle Park is sparse. Analysis of ground water from alluvial wells indicates the water quality is suitable for domestic and stock use. Limited water quality data from wells completed in the Troublesome Formation, in the Fraser area, indicate total dissolved solids are less than 200 mg/L<sup>4</sup>.*

It is not clear from these descriptions of the geology and hydrogeology that hydraulic fracturing can occur in Middle Park without harming underground drinking water sources which are an important public resource.

While the Environmental Assessment notes it cannot be certain whether wells will be subject to hydraulic fracturing and thus cannot assess this risk accurately it could protect underground drinking water sources from contamination by taking one of the following actions: Deferring/ withdrawing the parcels from lease or prohibiting hydraulic fracturing on the parcels until the geology and hydrogeology is well understood.. Before the BLM rejects these actions please consider the following article:

*Published in Environmental Science & Technology, the Stanford study identified chemicals in Pavillion's water related to substances that companies reported using in local fracking operations and acid stimulation, an oil and gas production method. The researchers also found that energy companies frequently fracked at much shallower depths than previously thought, sometimes very close to drinking water wells. In addition, companies fracked into underground sources of drinking water, or USDWs, defined under federal law as aquifers that could supply a public water system. Fracking into USDWs is legal, but the oil and gas industry has long insisted that fracking occurs far deeper than where aquifers are located.*

*DiGiulio was also one of the lead scientists on EPA's probe of Pavillion. He said the additional research he and Jackson did for their paper raised questions about groundwater quality in other parts of the West where fracking occurs. "Pavillion isn't geologically unique in the West, and I'm concerned about the Rocky Mountain region of the U.S.," DiGiulio said. "The impact on USDWs could be fairly extensive. Pavillion is like a canary in a coal mine and we need to look at other fields."*

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<sup>4</sup> Topper Ralf Topper, Karen L. Spray, William H. Bellis, Judith L. Hamilton, and Peter E. Barkmann. 2003. Ground Water Atlas of Colorado Special Publication 53 Colorado Geologic Survey <http://coloradogeologicalsurvey.org/water/groundwater-atlas/>

*.....In the eastern U.S., layers of shale often separate USDWs from fracking. But in Pavillion and other parts of the West, the layers of water and hydrocarbons are often not distinct.*

*"In USDWs, fractures need only propagate a short distance to cause impact," DiGiulio said in an email.<sup>5</sup>*

At least two studies have been done on geothermal resources in the Hot Sulphur Springs area, one by the Colorado Geological Survey 1982 (Pearl, Zacharakis, Ringrose) and one by Morgan, Witcher; *Geothermal Resources along the Southern Rocky Mountains and the Rio Grande Rift, 2011*. These indicate faulting which would allow the migration of hydraulic fracturing fluid from one horizontal to another impacting both water quality and the socioeconomic benefit of the Hot Sulphur Springs Resort.

Another point that the Environmental Assessment did not address is that water from Willow Creek Reservoir makes its way to municipal drinking water supplies as part of the Colorado Big Thompson Project. Contamination of this watershed could impact drinking water.

#### AIR QUALITY:

The Environmental Assessment regarding impacts to air quality is inadequate. A presentation<sup>6</sup> to the DNR on the Ambient Levels of VOC's in Front Range makes the following points regarding VOC's from the Oil and Gas Sector:

- Are key contributors to surface Ozone formation
- Are at levels that can be higher than in other urban or industrial areas in the
- US
- Large variability in ambient levels depending on sampling location relative to sources and meteorological conditions (dispersion)
- O&G emissions and controls effectiveness still need to be investigated and better assessed at the process and regional levels.
- Air quality monitoring is still sparse (spatially and temporally)  
Especially for Population and Workers Exposure

The Environmental Assessment does not explore the adequacy of air quality monitoring in Grand County, the adequacy of resources necessary for the APCD to accurately monitor impacts to air quality given the large variations due to location, sources and meteorological conditions. It is

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<sup>5</sup> Neela Banerjee Fracking Study Finds Toxins In Wyoming Town's Groundwater and Raises Broader Concerns, May 29, 2016 *Inside Climate News* <https://insideclimatenews.org/news/29032016/fracking-study-pavillion-wyoming-drinking-water-contamination-ep>

<sup>6</sup> Gabrielle Petron [http://dnr.state.co.us/ogtaskforce/Documents/Petron\\_COOGTF\\_January2015.pdf](http://dnr.state.co.us/ogtaskforce/Documents/Petron_COOGTF_January2015.pdf)

Impossible to know if air quality monitoring in adjacent counties is representative without air quality monitoring equipment located inside of Grand County. Further the Environmental Assessment misses an important component in its assessment of the accumulation of pollutants. The number of days with snow cover will have a direct impact on ground level ozone formation and its duration. The exemption of oil and gas from aggregated source point regulation in the Clean Air Act allows production in rural areas to directly emit known carcinogens, methane and VOC's into the air. This will occur in close proximity to Granby and Hot Sulphur. The thought that severely underfunded and deficient air quality monitoring and enforcement programs will adequately protect air resources in Grand County or will be protective of human health is magical thinking.

The CARMMS low scenario selection is based on a time period when the market price for oil discouraged new production. If the market price increases the production will increase and the CARMMS will have underestimated the impacts.

#### CLIMATE:

As far as GHG emissions, the Methane rules if enacted prior to January 20, 2017 will likely be rolled back later in 2017. This will make reaching RCP 2.6 or RCP 4.5 more difficult. GHG emissions resulting from federal oil and gas related activity should be evaluated nationally within one Environmental Impact Statement. Evaluating the impacts in a local EA, parcel by parcel is the wrong scale. It ignores the fact that the atmosphere is a planetary resource and that many seemingly non significant incremental actions add up to cause a significant harm to the public resource.

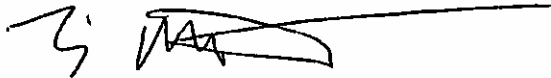
The article "The growing role of methane in Anthropogenic Climate Change" will be published in *Environmental Research Letters* on 12 December at <http://iopscience.iop.org/article/10.1088/1748-9326/11/12/120207> Authors: Saunols, M., Jackson, R.B., Bousquet, P., Poulter, B., Canadell, J.G. This article details a significant rate of methane emissions which will complicate reaching RCP 2.6 or RCP 4.5.

The BLM should withdraw or defer all parcels in its competitive lease sale until a comprehensive EIS on GHG emissions is completed. Lastly, the assumption that substitution from other fossil fuel sources will occur is just that – an assumption. Leadership, policy, technology and a relentless will have spurred rapid accomplishment within U.S. society. From putting man on the moon, the development of atomic weapons, to the eradication of polio there is little we can't do if we put our minds to it. As someone with an electric vehicle and a solar PV system I testify that the technology to replace fossil fuels already exists and if adopted at a large scale would get us well on the way to meeting RCP 2.6 or RCP 4.5.

#### SOCIOECONOMIC CONDITIONS:

The Environmental Assessment does not quantify revenue or jobs associated with recreational based activity or housing nor does it attempt to quantify how these would be negatively impacted by oil and gas production. The degradation of water and air resources, increased traffic, conversion of historic unimproved roads and trails to improved roads with closures will impact the tourism economy of Grand County. Until a more detailed assessment of the impacts on Socioeconomic Conditions is complete the no further action alternative for these parcels should be chosen.

Thank you for your attention to this protest,

A handwritten signature in black ink, appearing to read 'Liz McIntyre', with a long horizontal line extending to the right.

Liz McIntyre

Granby, CO, 80446